institutions where they become charges of the Government, and few or no questions are asked concerning the parents. Should the mother wish to abandon the child after it is seven months old, an effort is made to have her keep the child, for, having maintained it through this period, it should be a matter of comparative ease to continue its care.

These infants are immediately put out to a wet nurse who is paid a small amount each month by the Government for their support. When they become 13 years of age, if a boy, he is farmed out to a peasant and learns agriculture. At 20 his education is completed by going into the army for three years. Upon returning to civil life he usually continues what he was originally taught. Girls are placed in institutions where they receive religious training and usually one simple task, which may be to work a buttonhole beautifully, embroider a wonderful rose or make pieces of fine lace. She is taught nothing of household economy, nothing about the use of money and nothing of the ways of the world. At 20 years of age she is provided with a dot of 500 francs by the Government, which is supposed to start her in life. During the institutional life when warm weather comes she is provided with suitable garments and in winter with heavier ones, but she knows nothing of the purchase or nothing in regard to the making of them. If she goes to a large city and is fortunate enough to obtain employment in the one particular line in which she is skilled all may be well, but usually the inevitable outcome is the result. If they have brains and beauty they join the ranks of the demimondaine and if they are unsuccessful they drift back to the institution which originally cared for them, become drudges, burdens to themselves, the institution and the state, absolutely unproductive from the standpoint of future repopulation of the nation.

The medical profession seem thoroughly alive to the gravity of the situation, but on account of politics and somewhat different views of life and morality which France holds in contradistinction to our views, little or nothing is being done to remedy the situation. The only possible way the country can be repopulated and nationally become once more strong and vigorous is by a national educational propaganda instilling into the mothers the necessity of child-bearing and making it possible to support these children if the family cannot do so and to carry on an active and vigorous campaign for the conservation of child life, together with the hygienic and sanitary improvements and necessary education. Little or nothing will ever be done locally and only a national movement involving great labor, time and money will be of any avail.

We must all admit they are a wonderful people and have carried the brunt of this horrible war in a manner to amaze the world. We are much further advanced along many lines than they and there is no doubt our presence will have a most stimulating effect upon their future.

ENDOCRINE GLANDS AND THEIR RELATION TO VASO MOTOR DISTURBANCES OF THE AIR PASSAGES, HAY FEVER AND ASTHMA, WITH THE PAST YEAR'S REPORT.

(Continued from April issue.)

By GRANT SELFRIDGE, M. D., San Francisco, Cal.

FURTHER OBSERVATIONS.

Among the 26 cases of vaso-motor rhinitis 14 were found with signs of slight endocrine gland insufficiencies. No study was made of the remaining cases to determine the possibility of gland insufficiency. Several have had the focal infections removed, with the idea that the irritation (vagatonia) might be caused by the infection. Some of these have been relieved by the operative procedures, but here too, the period has not been long enough to be certain of the result.

HAY FEVER CASES.

Cases tested during the year, 41. Cases treated during the year, 29. Of the 41 cases seen 21 began treatment after the beginning of the hay fever season. Fourteen had no attacks at all after the first injection; seven had one to three attacks during the season; eight commenced treatment 3 to 5 weeks prior to the hay fever season; of these seven were entirely free of attacks. One had several attacks. Thirteen cases received no treatment.

During the past year, we have at various times used 125 pollens for testing purposes and the following have been positive:

Johnson grass	4 times	Cottonwood	1 times
Orchard grass	4 "	Poverty-weed	4 "
Broncho grass	15 "	Cal. goldenrod	1 "
Canary grass	14 "	Spikeweed	1 "
Salt grass	12 "	Bull thistle	1 "
Wheat	10 "	Curley-dock	2 "
Kentucky blue	11 "	Old man calif.	4 "
Sudan grass	1 "	Marguerite or field daisy	1 "
Wild oats	15 "	English plantain (ribwort)	8 "
Sitanion	5 "	Mugwort	8 "
Yarrow	2 "	Nev. mugwort	4 "
Tumbleweed	4 "	West. ragweed	7 "
Pigweed	1 "	Giant ragweed	3 "
Sage brush	6 "	Cocklebur	3 "
Giant rye	3 "	Sneezeweed	2 "
Slender rye	3 "	Dandelion	1 "
Red top	3 "	Red orache	4 "
Timothy	2 "	Teleg. plant	1 "
Alfalfa	1 "		
Cal. walnut	6 "		
Valley oak	2 "		

The grasses mentioned above belong to 6 tribes, of the others except the trees, four belong to the ragweed tribe, two to the aster tribe, one to the sneezeweed tribe, three to the chenopod family, one to the tarweed tribe, two to the sage brush and one to the polygonaceae (dock) tribe.

It will be seen that the spring type predominates, the explanation being that the cases so reacting live in San Francisco or in the nearby Bay counties. Unquestionably there are reasonably large numbers living in the southern part of the San Joaquin valley, who are sensitive principally to the summer and fall flora. This, judging from testing residents of Nevada last year and from correspondence directed to Utah, Colorado and Idaho is the rule in the States mentioned and should prevail in the dry valleys of our State owing to similarity of the air borne pollens.

Footnote—Cut No. 1 in April issue should be Cut No. 12; Cut No. 2 in April issue should be Cut No. 1; Cut No. 3 should have been put in April issue under Vaso Motor Rhinitis, case reported A. J.

It has been interesting to note that red top has occurred only three times and timothy twice, and in these cases both grasses have been known to thrive in the locality of the patient's residence.

In a fair number of the cases timothy has been tried and also grasses known to be in the patient's locality, while no reactions occurred from foreign ones. This also has proven to be the case with the chenopods, ambrosias and artemisias. Quite naturally, from such results, I feel that I must differ from Dr. Goodale and other investigators in the Eastern States and particularly the drug houses engaged in the exploiting of certain pollen vaccines, "that reaction from timothy for instance will give reaction to all grasses." It is no doubt true that all grasses of a single tribe will react more or less to other grasses of that particular tribe but it is untenable to assert that all tribes are similar.

In this contention I am upheld by Professor H. M. Hall, the head of the Department of Botany, University of California, who has so ably aided and advised me in my various investigations of the subject.

As to the method of testing, I have adhered to the method of skin tests advocated by Dr. Goodale, i.e. making a series of short cuts on the forearm 1-8 in. long and from 1 to 1½ in. apart, using alcoholic solutions. I am unable to see the advantage of the ocular tests, nor the interdermic injections with a fine needle, as advocated by Dr. Robt. A. Cooke. Cooke's method no doubt might occasionally develop reactions not found by the open cut method, but it is a time-consuming method and not adapted at all to the problems in the Western States, where the flora occurs in numbers so much greater than in Eastern States.

Of the hay fever cases, seen during the year only four cases of definite gland deficiencies were worked out.

In all cases, however, low blood pressure, from 100 to 115 was found, besides, subnormal temperature and pulse and a general complaint of more or less asthenia. This is suggestive to say the least.

I should like to report the following cases from those seen during the year because of the varied and interesting features shown.

Mr. L. from Pocatello, Idaho, consulted me in April, 1918. History as follows: Mother has had hay fever and asthma badly. He has had hay fever for seven years accompanied by severe frontal headaches. Attacks begin about April 1st and last until almost December 1st. Is subject to many colds and infection. Has had tonsils and appendix removed; teeth O. K. Plates show involvement of R. frontal and antrum. Irrigation of antrum through normal opening shows pus. He was tested with 19 pollens, 4 of which were positive (grasses, giant rye, red top, sudan, salt grass). He was negative to animal hair, feathers, and 40 foods. Frontal sinus and antrum opened and drained. Eight weeks after pus in incision of frontal due to unabsorbed chromic gut. Given pollen solutions at irregular intervals. Was referred to Major Moffitt for further examination. Moffitt's diagnosis pituitary and thyroid insufficiency. Moffit finds him "with rather erratic nervous temperament, apt to have times when he can do little and feels tired out and then spells when he can work intensely. Has periods of depression without cause, coming quickly and ending quickly, lasting two or three days ever since childhood. Sometimes a little tendency to fortification spectrum but with these no scotoma." He complains of a good deal of frontal headaches.

His frontal and other sinus troubles have been cleared up and the continuation of his queer headaches must be looked upon as due to circulatory disturbances, depending on the glandular insufficiencies.

It will be interesting to see if continuation of his ductless gland therapy without any further attempt to use pollen solution prior to the hay fever season of 1919 will stop his hay fever seizures. Should he have attacks of hay fever, the pollen solutions will be immediately resumed.

COMMENTS.

Referring back to the rather long list of pollens to which our group of cases were sensitive, and comparing it to that of various drug houses engaged in exploiting "hay fever" vaccines throughout the entire country, we are immediately struck with the dissimilarity in the botany of the *East* and *West*.

It is not commercially attractive for these drug houses with the possible exception of *one,* to put out solutions of value in the Western States, and it is therefore self-evident, if any physician really desires to benefit his hay fever patient he must pay attention to the botany of the patient's district and not shoot "stuff" haphazard into people, knowing, if he will only think, that it can do little if any good.

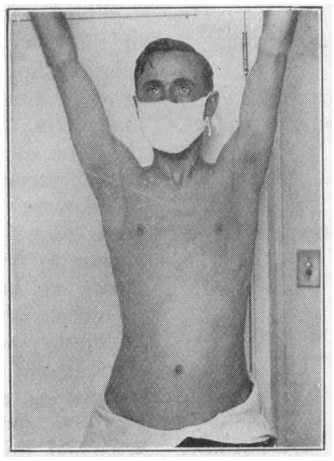
CONCLUSIONS.

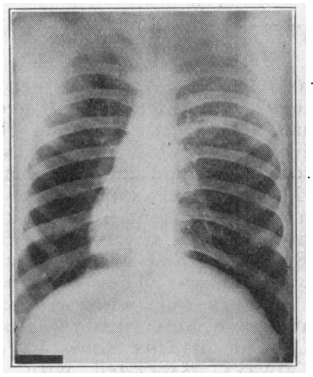
That the use of pollen solutions chosen from the list of the botany growing in the patient's locality and after careful testing of the patient to determine the offender or offenders is of *very great* value in the warding off of seasonal hay fever.

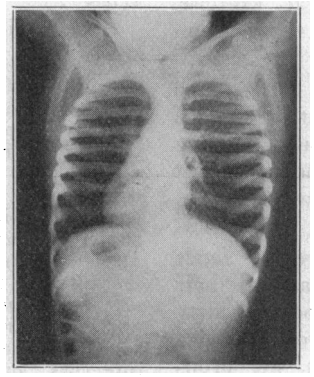
That its permanent curative value is for future determination. In the effort to obtain this focal infections should be removed to be supplemented if necessary by ductless gland therapy.

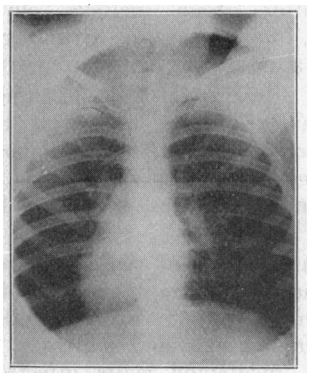
In approaching the asthma side of the subject, I do so with a feeling of trepidation because so many excellent articles have appeared in American literature especially those of J. Chandler Walker of the Peter Bent Brigham Hospital of Boston and Robert A. Cooke of New York. It is to Dr. Walker and his co-workers that the principal credit is due for the best of the work published in the past eighteen months, and for putting on a sound basis the methods of making the tests which are the only means of differential diagnosis as to etiology in this distressing symptom-complex.

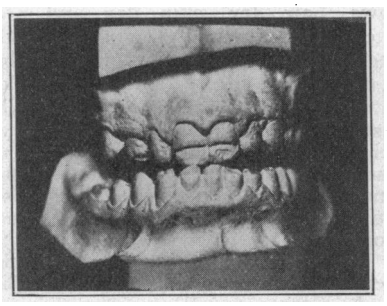
Cooke has given us the best schematic outline as an aid in the work as follows:

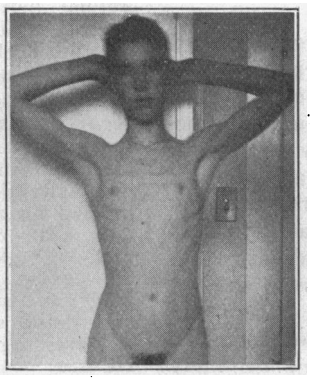


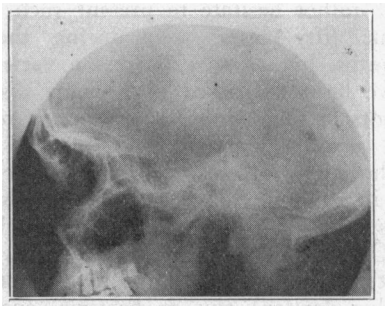


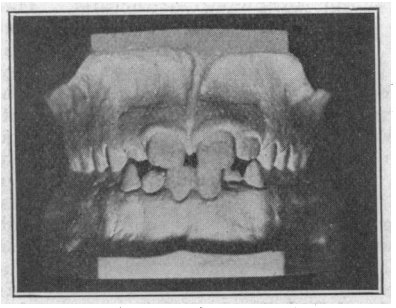












"ETIOLOGICAL CLASSIFICATION OF BRONCHIAL ASTHMA."

1. *Anaphylactic*: Protein absorption from,
   1. Respiratory tract,
      (a) Animal emanations, dander.
      (b) Vegetable emanations, pollens, sachet.
   2. Intestinal tract,
      Foods.
   3. Foci of infection.
   4. Subcutaneous tissue or intravenous injection.
      Therapeutic serums.
2. *Non-anaphylactic*:
   Thymus enlargement,
   Tuberculosis,
   Renal disease,
   Cardiac disease,
   Bronchial infections, acute and chronic,
   Reflex bronchospasm.

The latter group includes physical exercise, overeating, inhalation of irritating vapors and dust and atmospheric and barometric changes.

Walker illuminates and simplifies the schema for the student worker by stating that "The age at the onset of asthma is very important," during the first year of infancy should lead one to suspect milk, second year, eggs, cereals and wheat flour, frequently bacteria.

Between the ages of two and twelve the foods decrease and bacterias increase and animal hair and pollen come in. From childhood to forty bacteria, animal hair and pollens. From bacteria we are to understand acute infections, i.e. bronchitis, more commonly resulting from focal infections located principally in the nasal sinuses and tonsils.

I rather hesitate to present such a small group, some fifty cases, seen during the past twelve months, but as they express a varied etiology and have been associated with many discouraging moments in their study, I feel that it may be of some aid to other workers, beginning as I have to study asthmatic problems. Hoping therefore, that out of it all, something may be demonstrated to help this class of sufferers *particularly* children.

Of this group, 52 in number, 14 were anaphylactic, 10 due to animal hair, (9 horse dander and 1 dog dander) two to bacteria, one to food, two to pollens. Of the remaining cases one definitely tubercular with cavities in the lungs, associated with recurring infection from an antrum, relieved by vaccines; one probably in the class of pre-tubercular and having the asthmatic breathing in only one area of the right lung.

The other thirty-six should be classed as "asthmatic bronchitis associated with colds." Thirteen of these had one or both antra involved with ethmoiditis associated once and frontal sinuses once, teeth and tonsils infection found in several.

Twenty-two gave signs of endocrine disturbances, six thyroid predominating, 15 hypo-pituitary, one probably status lymphaticus. Gland disturbances in the other thirty cases were not searched for because my interest had not been thoroughly aroused to that phase of the subject prior to six months ago.

PITUITARY CASES.

The particularly interesting and striking feature of those where pituitary signs predominate, is the relationship of anaphylaxis to pituitary disturbances. This is present in those reacting to animal hairs, foods, bacteria. Also in those where the type of colds seems to be *anaphylactic* rather than bacterial.

Likewise in all, where stereoscopic X-ray pictures have been taken of the *sella turcica,* there appear to be departure from the normal measurements as laid down by Schuller in "Roentgen Diagnosis of Diseases of the Head."

Another interesting feature of the anaphylactic cases is the chest findings as shown in the X-ray stereoscopic pictures. Here as a rule normal readings are made in contradistinction to the peribronchial thickenings commonly found in the class of so-called "asthmatic bronchitics," or infective types.

From this group I should like to give the histories more in detail as follows:

Case 1. Chas. C., age 9½ years, seen April 1st, 1918. No history of asthma except great grandmother who had a little late in life. Mother and grandmother (mother's side) had dry scaly skins (ichthyosis) from childhood until puberty when it disappeared. Mother still some signs of slight hypothyroidism. The patient showed thyroid insufficiency as an infant of 6 months. First attack of asthma at 8 months and at 20 months attacks lasting two to three days. They kept recurring at intervals until 5 years old, when a change to a northern climate gave him freedom from attacks for two years. The attacks since have been at intervals, but always associated with colds and bronchitis, tonsils and adenoids removed some years ago. He was tested with 59 food proteins, animal hair and feathers; all negative. Further examination showed thinning of the outer third of the eyebrows, hair dry, skin dry and scaly, constipation, cold feet, had eneuresis when younger spaced front teeth. (Thyroid has been recommended earlier in life.) Has been taking thyroid up to 3 grs. daily for 6 months. Child seen in August this year, better in every way especially the ichthyosis but mother reported that he had an attack late in June when in the woods and near certain shrubs. He was then tested with the following pollen solutions: Kentucky blue grass, broncho grass, canary grass, timothy, wild oats, salt grass, orchard grass, English plantain, daisy, elderberry, California walnut, dandelion, western ragweed, mugwort; all proving negative. He may possibly have been sensitive to some other pollen unknown. The thyroid was continued and possibly post hypophyses may be recommended next year.

Case 2 H. B., age 6 years. Asthma commenced when two years old following bronchitis. Had three attacks a year until tonsils were removed two years ago. Mother was told he had climatic asthma and so went to the San Joaquin valley, where he was free of attack until he was brought back to San Francisco in August, 1917, three attacks since. Was tested with 29 foods, animal hair, feathers and staphlococcus, all negative. No focal infection. Urine and sputum negative. Skin bluish, cold to the touch. Has dry upper lids, puffy, protruding abdomen, mouth open (although adenoids and tonsils out) eyes dull, mind dull, in fact he looked generally foolish. No history of hives or constipation but had eneuresis. He was put on thyroid gr. 1-8 daily, increasing every 3rd day, 1-8 gr. He kept increasing dose until at present is taking 2 grs. daily. The improvement

has been quite marked. No asthmatic attack since, the chest had "squeaks" on several occasions. Has had two or three colds in past 7 months but no asthmatic attacks. When last seen Nov. 5th the boy had grown fully 3 inches, color of skin and dryness about normal, hardly any rales in chest, activity of mind vastly improved and appearance (brightness of face) decidedly different. No change in the nocturnal eneuresis.

Case 3 C. P., age 8, height 4 ft., 1 in, weight 52¼ lbs. Has had asthma since 14 months old following bronchitis. Father had asthma as a boy, in fact was practically bed-ridden until 14 years old. From 14 to 40 no asthma. Three years ago got an attack. No asthma on mother's side. Brother has hives. Had eczema when 3 months old, which cleared up to be followed by asthma. Present attacks accompanied with herpes around the mouth. Her tonsils and adenoids were removed two years ago. Cannot ride behind a horse or come near a cow without having an attack of asthma. Has a very low sugar tolerance. Loses her voice within a few minutes after eating "marshmallow"; eggs and walnuts upset her; her attacks are worse during the pollination season of grasses. She fatigues easily and is easily excited. Mentally is precocious for her age. She has spaced front teeth (central incisors); her skin is dry and arms and legs quite hairy. Her back is covered with fine hair 1½ inch long from back of neck to the small of her back. Her differential blood count is haemoglobin 70%, R.B.C. 4260000, W.B.C. 14400. Poly 24%, large lymp. 2%, small lymp. 71%, Transitional 2%, Eosinophiles 1%, Urine normal, Temp. subnormal, pulse 88. Of the pollens she is sensitive to 5 grasses; of the foods, corn and walnut positive; of the animal hairs, horse dander positive.

The chest picture shows some peri-bronchial thickening on the right side and her asthmatic breathing is principally on the right. The sella distinctly large and coupled with the teeth signs and the lessened sugar tolerance suggests fairly definitely post pituitary changes, the dry skin to thyroid and the excessive hair growth to adrenal. The whole case suggests a poly-glandular insufficiency with the pituitary predominating. Her treatment will consist of a desensitization to the horse dander and pollens combined with pituitary feeding plus the other gland substances later on.

Case 4. DeW. R., age 17, resident of Fresno. Mother asthmatic. Has had hay fever 4 or 5 years, attacks all year but worse in Spring. Asthma always follows colds. During attacks unable to sleep or climb stairs. Tonsils have been removed. Nothing in nose. Chest picture normal. Was tested with 23 pollens and found sensitive to salt grass and orchard grass. Negative to all foods, feathers, animal hair and tuberculin. Asthma is therefore permanently associated with pollens. He has no ambition, fatigues easily. Head aches very frequently, pupils well dilated, subnormal temperature, pulse 90. Skin very delicate white and thin, pubic and axillary hair distribution normal, none elsewhere on body, little showing on face. Looked upon as a slight hypo-pituitary and hypo adrenia subject, he was given ½ c.c. hypophyses and surrenal weekly. This he has had for two months with a generally definite improvement. No asthma in spite of one or two slight colds. Sleepiness gone, fatigue neurosis much improved. He has been asked to discontinue injections for a period of weeks to see how long the improvement will last.

Case 5. Ernest W., age 16. Constant colds and sneezing for 4 or 5 years accompanied by asthmatic breathing. There is no asthma in his family. His tonsils are O. K. Some secretion in middle meatus of left nostril. His palatal arch is high. Enamel from several teeth partly absent, especially central incisors. He has a long thorax, broadened pelvis. Pubic hair feminine type, sex organs normal. Has no hair on body or in axillae. Scapulae winged in bending forward. Has no excessive desire for sugar; loses "pep" only when has a cold. Blood examination nothing except very high eosinophiles 11%. The young man's general findings suggest from his teeth a tetany though he gives no history of spasms. The loss of calcium salt from the enamel probably is best explained on the basis of a para-thyroid deficiency. From his general appearance "Ewings" type of "status lymphaticus" except that the change in the sella which makes one include the pituitary in the glandular insufficiency picture. He has been referred to Dr. Kruse for further study and treatment with the recommendation that nothing be done surgically for the present and that he be given a prolonged treatment with gland substance to see whether the local infection in the nose will improve along with his general condition (lack of resistance).

Case 6. R. C., age 24, consulted me in January, 1918. Family history: father had hay fever, uncle asthma, grandmother on father's side gout. Mother's side no history of hay fever or asthma Personal history: asthma since two years of age; was told that he used to have large hives on his legs after riding a pony when a child. Had fully 15 attacks yearly, which lasted from 7 to 10 days. Attacks frequently associated with bronchitis. Had pneumonia two or three times. Has tried all climates in different parts of the world; has had many physicians and has been given every remedy believed to influence asthma without result. Tonsils removed in 1910. Noticed that he was comparatively free of asthma at the sea shore, but always choked up and had oppression in chest whenever in city. Finally concluded it was associated with horses.

Examination of nose showed a badly deflected septum, no evidence of sinusitis, had a high arch and front teeth crowded and irregular. Lower jaw of the overshot type. X-ray shows peri bronchial thickening and should be considered a negative plate.

He was tested with 59 foods, cat, dog and horse dander. Slightly sensitive to cabbage, canteloupe, radish, carrots, asparagus and spinach. He gave a tremendous reaction to horse dander solution ¾ in. to 1 in. with a 3 in. red zone about the hive. He was first injected with the alkaline meta protein solution 1:100000. After possibly five injections the change was made to the total dander solution 1:100000. The injections being given at weekly intervals in 3, 5, 8 and 12 drop doses; then the same procedure with the 1:10000 and 1:1000 solutions. These injections were carried on for a period of months with occasional lapses of 10-14 days without injections and during this period he had one or two slight attacks of asthmatic breathing. The net result was encouraging so far as the asthma was concerned, but not until the injections were taken without a break in the 5-day period, did it appear that we might control the chest oppression. We found however, about the first week of May that this disappeared and by the end of May his skin reaction was practically negative to all solutions. The young man, who had been unable to either go to college or enter any business, took a position as a roustabout in his uncle's shipyard in Seattle. He has had one severe attack of bronchitis with high temperature and asthma which lasted 10 or 12 days. He is taking his dander regularly. Whether this solution will finally overcome his cold catching tendency or whether his immunity can be lifted up still further with ductless gland therapy is a problem for the future.

The interesting side of this case is that he has improved under the use of horse dander solutions and it is the first time in his life that he has been able to think there was a place in the world's activity in which he might be of use.

Case 7. Mrs. O. W., resident of Nevada, age

44. Seen in February for asthma summer type. Father died of apoplexy at 72, mother from puerpural fever. has had all children's diseases. Menstruation first at 16 years; at present menstruation very profuse. Was athletic during student days, but always fatigued easily. Her asthma commenced 15 years ago following the birth of a son and was aggravated by the least exertion. For several years past the attacks have occurred during June to September about 3 attacks a week. Is free from attacks during winter and spring months. The first severe attack following a drive behind horses. Tonsils were removed three years ago. She has a deflected septum and spaced front teeth and X-ray showed several abscessed teeth. Skin test showed her sensitive to 8 pollens and to horse dander. Blood pressure 100, subnormal pulse and temperature, eosinophiles 6%, urine normal. The focal infections were cleared up and septum straightened to improve breathing only. Injections of horse dander solution 1:100000 was commenced in April and pollen solution 1:200000 in March, 1918. Doses given at 5 day intervals for each, i.e. a dose every 3rd day for five doses, then stronger solution until 1:1000 solutions were used. These were carried through the entire season. She was entirely free for the season except one occasion in July when she had gone a number of days without an injection. The attack of asthma was "anaphylactic" due to too strong a dose, the immunity having declined during the days she had no injection. At the end of the season she developed a sinusitis and an infective bronchitis with some asthma. This cleared after washings of the antra. Two weeks after she complained bitterly of asthenia and was "all in" mentally and physically. Blood pressure low. She was now put on Choay's preparation of "hypophyse" and "surrenal" 7 minims of each, increasing the hypophyse to 15 drops. One hypo every five days and continued for a period of several weeks. I am able to report that the patient's general condition tion is much improved. She is able to work long hours for the Red Cross but notices that she begins to get weary about the end of the 4th day. It is interesting to note that the blood pressure continues good at the end of the 4th day, being 140 five minutes after injection.

No pollen or horse dander solution will be used prior to the patient's usual season for asthma this year, but the ductless gland treatment will be kept up at least until the asthma season is at hand.

The explanation of the freedom of winter asthma I believe is that then horse dander particles are not found in the atmosphere at the altitude of her home (over 5000 feet) during the winter season. The reaction from the dander was more severe than the pollens, which suggests that the pollens were not the most important factors in the asthma.

Case 8. George S., age 46 years, was referred to me to see if his asthma was due to any infection in his nose or tonsils or to pituitary changes. His history is as follows: Has had asthma since 1915 following grippe. Has had considerable sneezing with discharge from the left nostril and says he had an acute sinusitis six months ago. A strip was removed from the inferior border of both lower turbinates some months ago which improved his breathing somewhat. There is no asthma in his family. During the past year his asthma has recurred frequently and for the three weeks prior to seeing me and following three injections of influenza vaccine it has been continuous. His examination developed the following: Weight 198, height 55½, blood pressure 130, temperature 97.4, pulse 84. No special fat deposits. Short square fingers, spaced front teeth. Body very hairy, especially on arms and chest. Tires easily, perspires readily. Has occasional headaches. Frequent nose bleeds from the age of 14 to 40. Sexual capacity active from 14 to 40. Eats quantities of bread and butter. Tonsils have a little cheesy material. The tubercle septi very sensitive to probing. Turbinates whitish in color and boggy. X-ray of sinuses shows thickening of the antral floor. Irrigation of antra, slight amount of mucus. X-ray of sella shows rather wide and deep. His blood count is as follows: Haemoglobin 85%, red 4,168,000, white count 8,400, polys 85, lymph. 15, eosin none. Tested with the following foods: peas, beans, white and sweet potatoes, corn, barley, rice, rye, oats, wheat, milk, eggs staph. strep. influenza, micrococcus cat; all negative. He was advised to enter hospital to have his blood sugar content determined and to undergo a course of pituitary feeding and later on to have his focal infections cleared up if still present.

RESULTS OF TREATMENT.

Horse dander cases: Of those associated with pollens, two had complete relief during the season, one now being treated with a French preparation of "post hypophyse" and surrenal hyperdermically at 5-day intervals. Two have been entirely relieved.

One is entirely free from oppressed breathing, which has always bothered him when in city, but he has had two severe attacks of bronchitis with high temperature and asthma. His horse dander solution will be continued over a period of months.

One is associated with foods, has had no attack in seven months except traceable to corn to which he was sensitive.

One under treatment, so far no trouble except from overdose when asthma lasting four days resulted.

One improved, patient lives a distance and other factors have not been worked out. The dog dander case was relieved for several months but had asthma on two or three occasions following colds and relieved with vaccines.

THOSE UNDER DUCTLESS GLANDS.

One has had one attack in six months, two have had no attacks, one under the care of another physician, two passed from observation, eight have delayed treatment.

OF THE BACTERIAL CASES.

One relieved by large doses of staphylococcus to which he was sensitive and the removal of his tonsils and draining antrum. The other bacterial case is still in the testing stage and therefore no treatment undertaken.

OF THE FOCAL INFECTIONS.

Six have been operated, four relieved, one still under treatment, one not benefited.

It will therefore be seen that hardly sufficient time has elapsed since most of this series of asthmatics have been under observation to come to definite conclusions regarding results of treatment, but judging from recent reports submitted by Cook (N. Y. Med. Journal, March 30, 1918), Chandler, Walker and Rackemann (Arch. Internal Medicine, Oct., 1918), of cases strictly anaphylactic in type (with practically only 7% failures) the work holds out great promises for its continuation. If the work mentioned in Hofrendahl's article (reflex neuroses) carried on in Von Noorden's clinic (by Bartelle, Falk and Schweeger)

who experimentally established that substance heightening the vagatonus, produces a neutrophylic-eosinophilic blood picture and they used hermones in their experiment, is produced by other observers, it will go a long way towards conclusions regarding the *large* class of "asthmatic bronchitics" whose resistance to infections is below normal and who may show an ill-defined picture of endocrine gland disturbance.

In searching for the cause of vaso-motor disturbances of the upper and lower respiratory tract, it seems to be worth while to bear in mind the influence of the autonomic or para-sympathetic nervous system in the nasal and bronchial neuroses and with it in view reproduce the following cut shown in my article on "vaso-motor disturbances" published in April, 1918, which illustrates the origin and distribution of the autonomic and sympathetic fibres.

One cannot leave this interesting subject without suggesting the need of careful investigation of those organs supplied by the lower end of the picture and to recall the great influence of *dysfunction* of these organs on neuroses, nasal as well as general.

ADDENDA.

The question of the ductless glands has been brought forward because we cannot see all cases belonging to the different groups mentioned in this paper, cured entirely by the removal of focal infections plus the injection of various protein solutions. And, while we admit that very many cases may not be benefited by the administration of gland products by mouth or hyperdermically, especially in adults, we feel the recognition of gland deficiency among children particularly, who exhibit ataxia of the vaso-motor system and in whom the suggestions presented in this paper are followed out, may ultimately be put in the class of cured cases who otherwise might be doomed to grow up as defectives variously classified.

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TUBERCULOSIS A GOVERNMENT PROBLEM

"Tuberculosis is another widespread evil which can not be successfully contended against except by educational processes through the combined efforts of the national, state and municipal governments intelligently directed to overcoming the general ignorance of the common people on this subject. The medical profession and private philanthropists have taught how to reduce sickness and mortality from tuberculosis, and so to put an end to the great impairment of national prosperity and private happiness caused by this disease; but only the public treasuries can pay the cost of carrying on an active and comprehensive campaign against this deep-seated evil. The National Government has made some successful efforts to abate, during this 19 months' war, the hideous evils of alcoholism, tuberculosis, and venereal disease, and every effort in this direction should be continued and developed now that the war is over. The states and municipalities should join in this effort; and it is the duty of every educational force in the country—universities, colleges, technical institutes, school boards, medical schools, and normal schools—to join in remedying in the rising generation the physical and mental defects from which they are suffering, and in delivering the coming generation from diseases of vice and ignorance from which their predecessors have suffered so intensely. In so doing they will be striving to eradicate defects in American education which have been emphasized by the war, though antedating